

NATIONAL RISK MANAGEMENT RESEARCH LABORATORY

SUMMARY OF RESEARCH PRODUCTS AND PROJECTS

**RELATED TO TMDL IMPLEMENTATION/WATERSHED
RESTORATION**

MAY, 2000

PUBLICATIONS

1. **Methodology for the Study of Urban Storm Generated Pollution and Control, EPA-600/2-76-145.**
This report contains recommendations for standard procedures to be following in the conduct of projects dealing with pollution assessment and abatement of storm generated flows. Contact: Rich Field (732) 321-6674
2. **Development and Application of a Simplified Stormwater Management Model, EPA-600/2-76-218.** This report describes a simplified stormwater management model that provides an inexpensive, flexible tool for planning and preliminary sizing of stormwater facilities. Contact: Rich Field (732) 321-6674
3. **Stormwater Management Model - Level 1- Preliminary Screening Procedures, EPA-600/2-76-275**
This report presents a "desktop" procedure that was developed to do a nationwide assessment of stormwater pollution control costs and can be used for watershed TMDL determination. Contact: Rich Field (732) 321-6674
4. **Areawide Assessment Procedures Manual - Volume I-III, EPA-600/9-76/014-1,2, 3; Set: NTIS No. Pb-271863.** This manual summarizes and presents a range of available procedures and methodologies that are available for identifying and estimating pollutant load generation and transport from major sources within water quality management planning areas. Contact: Rich Field (732) 321-6674
5. **Urban Stormwater Management and Technology - Update and User' Guide, EPA-600/8-77-014.** This report re-examines state-of-the-art storm and CSO overflow control technology. Contact: Rich Field (732) 321-6674.
6. **A Statistical Method for the Assessment of Urban Stormwater: Loads, Impacts, Controls, EPA- 440/3-79-023.** This manual describes a simplified methodology which can be used to assess the impact of urban stormwater loads on the quality of receiving waters, and to evaluate the cost and effectiveness of control measures for reducing these pollutants. Contact: Rich Field (732) 321-6674
7. **Urban Stormwater Management and Technology: Case Histories, EPA-600/8-80-035.** This report presents 12 case histories representing the most promising approaches to stormwater control and describes for each case: approach methodology, design considerations, costs, effectiveness, and environmental and socioeconomic impacts. Contact: Rich Field (732) 321-6674
8. **Methodology for Evaluating the Impact and Abatement of Combined Sewer Overflows - a Case Study of Onondaga Lake, New York, EPA-600/8-80-048.** This report presents a general methodology for the evaluation of the impact and abatement of CSOs on receiving waters. Contact: Rich Field (732) 321-6674
9. **Urban Rainfall-Runoff-Quality Data Base, EPA-600/2-81/238.** This database includes rainfall runoff quality data assembled on a storm-event basis for 48 catchments in 16 cities nationwide. Contact: Rich Field (732) 321-6674

10. **Stormwater Management Model User's Manual - Version 4, EPA-600/3-88/001a.** This user's manual provides detailed documentation of EPA's comprehensive mathematical model for the simulation of urban runoff quantity and quality in storm and CSO systems. Contact: Richard Koustas (732) 321-6639
11. **Guidance Manual for Integrated Wet Weather Flow (WWF) Collection and Treatment Systems for Newly Urbanized Areas (New WWF Systems), publication pending.** This manual provides detailed methodology for planning and designing urban drainage system for both pollution and flood control. A new model (SLAMM) for source area runoff volume and pollutant reduction was interfaced with the EPA's Storm Water Management Model (SWMM) for the simulation of urban runoff quantity and quality in storm and CSO systems. Contact: Rich Field (732) 321-6674
12. **Costs of Urban Stormwater Control, publication pending.** This document presents information on the cost of stormwater pollution control facilities in urban areas, including collection, BMP control, treatment systems, as well as identification of cost information gaps and research needs. Contact: Dr. D. Lai (732) 321- 6632
13. **Investigation of Inappropriate Pollutant Entries into Storm Drainage Systems: A Use Guide, EPA- 600/R-92/238.** This manual provides guidance to municipalities for investigating non-stormwater entries into storm drainage systems. Contact: Rich Field (732) 321-6674

TTSD Watershed-related Research/Product List

April 17, 2000

Manuals

- Alternative Collection Systems for Small Communities*; 625/1-91/024; contact Jim Kreissl.
- Guidelines for Water Reuse*; 625/R-92/004; contact Jim Kreissl.
- Wastewater Treatment/Disposal for Small Communities*; 625/R-92/005; contact Jim Kreissl.
- Control of CSO Discharges*; 625/R-93/007; contact Dan Murray.
- Process Design Manual for Land Application of Sewage Sludge and Domestic Septage*; 625/R-95/001; contact Jim Smith.
- Process Design Manual: Surface Disposal of Sewage Sludge and Domestic Septage*; 625/R-95/002; contact Jim Smith.
- Groundwater and Wellhead Protection*; 625/R-94/001; contact Jim Smith.

Handbooks

- Sewer System Infrastructure Analysis and Rehabilitation*; 625/6-91/030; contact Jim Kreissl.
- Urban Runoff Pollution Prevention and Control Planning*; 625/R-93/004; contact Dan Murray.
- Guide to Septage Treatment and Disposal*; 625/R-94/002; contact Randy Revetta.
- Management of Water Treatment Plant Residuals*; 625/R-95/008; contact Jim Smith.
- Optimizing Water Treatment Plant Performance Using Composite Correction Program* (1998 Ed); 625/R-91/027; contact Jim Smith.

Seminar Publications

- Nonpoint Source Watershed Workshop*; 625/4-91/027; contact Dan Murray.
- The National Rural Clean Water Program Symposium*; 625/R-92/006; contact Dan Murray.
- Wellhead Protection: A Guide for Small Communities*; 625/R-93/002; contact Jim Smith.
- National Conference on Urban Runoff Management*; 625/R-95/003; contact Dan Murray.

National Conference on Environmental Problem Solving with Geographic Information Systems; 625/R-95-004; contact Sue Schock.

National Conference on Sanitary Sewer Overflows; 625/R-96/007; contact Dan Murray.

National Watershed Water Quality Project Symposium, Proceedings; 625/R-97/008; contact Dan Murray.

National Conference on Tools for Urban Water Resource Management & Protection, Proceedings, Chicago IL, February 7-10, 2000; EPA/625/R-00/001 (paper) and EPA/625/C-00/001 (CD); contact Scott Minamyer or Alan Everson.

National Conference on Retrofit Opportunities for Water Resource Protection in Urban Environments, Proceedings, Chicago IL, February 9-12-1998; EPA/625/R-99/002 (paper) and EPA/625/C-99/001 (CD-ROM); contact Scott Minamyer or Alan Everson.

National Conference on Groundwater Risk Management, Proceedings, Atlanta, November 1999; EPA # not yet assigned; contact Alan Everson.

National Conference on Management and Treatment of Contaminated Sediments, Proceedings; Cincinnati, OH, May 13-14, 1997; 625/R-98/001; contact Joan Colson.

Environmental Regulations and Technology Publications

Control of Pathogens and Vector Attraction in Sewage Sludge; 625/R-92/013-1999 Edition); contact Jim Smith.

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Land Remediation Pollution Control Division
National Risk Management Research Laboratory
Activities Impacting Watersheds and TMDLs Implementation
May 3, 2000

Sediments

1. Natural Attenuation Field Studies

Examining the effectiveness of natural recovery in sediments and evaluating conceptual and predictive models. Contact: Dick Brenner 513-569-7657

2. Determining Bioavailability in Sediments

Identifying physical/chemical parameters which control and/or correlate with bioavailability of PAHs. Contact: Dr. John Haines 513-569-7446

3. PCB Volatilization

Evaluating the extent to which PCBs volatilize when sediments are exposed to the atmosphere. This will particularly impact tidally influenced areas subject to wetting/drying cycles or other water bodies with significant water level fluctuations. Contact: Paul DePercin 513-569-7797

Ecosystem Restoration

1. Salt Marsh Recovery

Evaluating the recovery of a salt marsh from a sudden significant event such as oil spill. Contact: Dr. Al Venosa 513-569-7668

Controlling Sources of Toxics

1. Landfill Bioreactors

Evaluating the operation of landfills as bioreactors to enhance the degradation of the wastes and minimize long-term liabilities of the waste mass. Landfills can have a significant impact on ground water and surface water bodies, air emissions and atmospheric deposition of the contaminants. Contact: John Martin 513-569-7758

2. Immobilization of Metals

Evaluating and modeling the chemical thermodynamics of the formation of chloropyromorphite from the compounds and minerals of lead found in soils. Contact: Dr. Jim Ryan 513-569-7879

3. In Vitro and In Vivo Measures of Lead Bioavailability

Evaluating techniques to measure bioavailability of lead in soils and to develop protocols to relate in vitro data with in vivo measures. Contact: Dr. Jim Ryan 513-569-7879

WQMB Watershed Research

PEER REVIEW ARTICLES

- Title: Radium Disequilibria Excess on Colloids Associated with Infiltration Waters of Distribution Ditches in Constructed Wetlands at Kankakee Watershed, Indiana, APPUGO Chemistry, February, 2000.
Contact: William C. Sidle, Hydrologist, WQMB, 513/569-7212
Research Area: Groundwater/Surface water interaction
- Title: Impacts of Hydrologic Modifications on Nitrate Attenuation in Restored and Native Riparian Zones in the Kankakee Watershed, Indiana, Wetlands, June, 2000.
Contact: William C. Sidle, Hydrologist, WQMB, 513/569-7212
Research Area: Groundwater/Surface water interaction
- Title: Urban Stormwater Tracing with the Naturally Occurring Deuterium Isotope, Water Environment Research, Volume 71, Number 6, September, 1999.
Contact: William C. Sidle, Hydrologist, WQMB, 513/569-7212
Research Area: Groundwater/Surface water interaction
- Title: Evaluating the Effects of Upstream Dischargers on Downstream Water Supplies: A Source Water Protection Model, Journal Water Supply Research and Technology - AQUA, Vol. 47, No. 5, pp. 215-222, 1998.
Contact: James A. Goodrich, Chief, WQMB, 513/569-7605
Research area: Source Water Assessment
- Title: Drinking Water From Agriculturally Contaminated Groundwater, Journal of Environmental Quality, Vol. 20, No. 4, pp. 707-716, October-December, 1991.
Contact: James A. Goodrich, Chief, WQMB, 513/569-7605
Research Area: Tool Development
- Title: Characterizing Surface Waters That May Not Require Filtration, Journal American Water Works Association, Vol. 82, No. 12, pp. 40-50, December, 1990.
Contact: James A. Goodrich, Chief, WQMB, 513/569-7605
Research Area: Source Water Assessment

Title: The Ohio River Oil Spill: A Case Study, Journal American Water Works Association, Vol. 82, No. 3, pp. 39-44, March, 1990.
Contact: James A. Goodrich, Chief, WQMB, 513/569-7605
Research Area: Source Water Assessment

Title: Treatment of Seasonal Pesticides in Surface Waters, Journal American Water Works Association, January, 1989.
Contact: Carol A. Fronk, Chemical Engineer, WQMB, 513/569-7592
Research Area: Tool Development

Title: Using Reverse Osmosis to Remove Agricultural Chemicals From Groundwater, Journal American Water Works Association, August, 1987.
Contact: Carol A. Fronk, Chemical Engineer, WQMB, 513/569-7592
Research Area: Tool Development

Title: Drinking Water and Cancer Mortality, The Science of the Total Environment, Vol. 53, No. 3, pp. 53-172, September, 1986.
Contact: James A. Goodrich, Chief, WQMB, 513/569-7605
Research Area: Source Water Assessment

Title: Toxic Screening Models for Water Supply, Journal Water Research Planning and Management, ASCE, Vol. 112, No. 2, pp. 149-165, April, 1986.
Contact: James A. Goodrich, Chief, WQMB, 513/569-7605
Research Area: Tool Development

Title: Drinking Water Supply Management: An Interactive Approach, Journal Environmental Systems, Vol. 15, No. 1, pp. 1-18, Fall, 1985-1986.
Contact: James A. Goodrich, Chief, WQMB, 513/569-7605
Research Area: Tool Development

Title: Estimation of Water Demands Using Deficit Analysis, Journal of the Water Resources Planning and Management Division, Proceedings of the American Society of Civil Engineers, pp. 271-286, October, 1983.
Contact: James A. Goodrich, Chief, WQMB, 513/569-7605
Research Area: Tool Development

Title: Predicting Future Water Demand, Journal of the Environmental Engineering Division, Proceedings of The American Society of Civil Engineers, Vol. 108, No. EE6, pp. 1248-1264, December, 1982.
Contact: James A. Goodrich, Chief, WQMB, 513/569-7605
Research Area: Tool Development

REPORTS

Title: Modeling Support for Watershed Research - Hardware and Software Integration, January, 2000.
Contact: Lucille M. Garner, Environmental Scientist, WSWRD, 513/569-7417
Research Area: Tool Development

Title: Source Water Assessment Using Geographic Information Systems, December, 1998.
Contact: Lucille M. Garner, Environmental Scientist, WSWRD, 513/569-7417
Research Area: Source Water Assessment

Title: A Geographic Information System For The Ohio River Basin, October, 1993.
Contact: James A. Goodrich, Chief, WQMB, 513/569-7605
Research Area: Tool Development

Title: Computing TMDLs for Urban Runoff and Other Pollutant Sources, August, 1991.
Contact: Lewis A. Rossman, Environmental Scientist, WSWRD, 513/569-7603
Research Area: Tool Development

Title: Predicting Toxic Waste Concentration in Community Water Supplies: Analysis of Vulnerability to Industrial Discharges, EPA-600/2-84-112, Municipal Environmental Research Laboratory, Office of Research and Development, U. S. Environmental Protection Agency, Cincinnati, Ohio 45268, June, 1984.
Contact: James A. Goodrich, Chief, WQMB, 513/569-7605
Research Area: Source Water Assessment